A new anti-frost and anti-fog coating for glass

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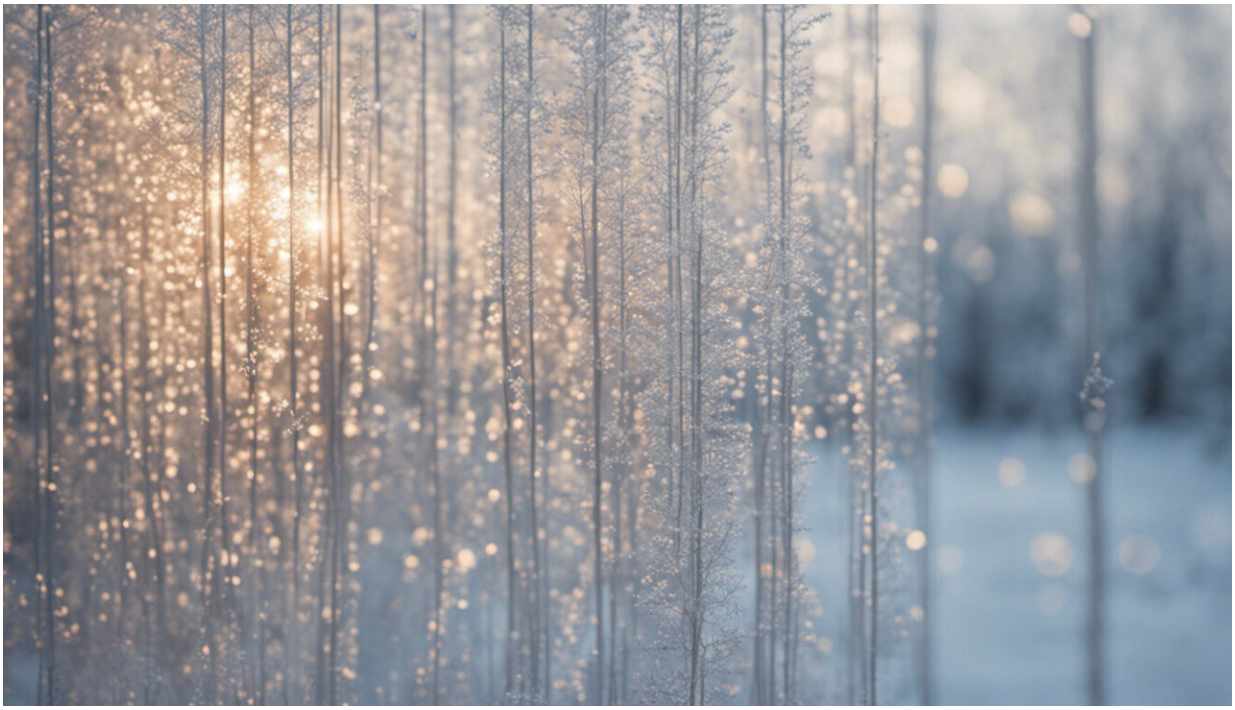

Credit: AI-generated image (disclaimer)

In an advance toward glass that remains clear under the harshest of conditions, scientists are reporting development of a new water-repellant coating that resists both fogging and frosting. Their research on the coating, which could have uses ranging from automobile windshields to camera lenses, appears in the journal *ACS Nano*.

Michael F. Rubner, Robert E. Cohen and colleagues point out that anti-fogging coatings that absorb water have been the focus of attention lately because of their ability to reduce light scattering and the resultant distortion caused by condensation. However, under extreme fogging conditions, these surfaces may frost and become foggy. They set out to make a better coating to withstand the aggressive conditions.

Their report describes development and testing of a new coating that rapidly absorbs water molecules that cannot freeze in the coating. At the same time, the coating has a water-repelling or hydrophobic effect to larger water droplets. The hydrophobic character means that water droplets do not spread extensively on the coating but essentially remain as flattened droplets.

More information: Zwitter-Wettability and Antifogging Coatings with Frost-Resisting Capabilities, *ACS Nano*. pubs.acs.org/doi/abs/10.1021/nn3057966

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